

WHAT IS CLAIMED IS:

1. A displacement transducer comprising:  
first and second non-ferromagnetic coil forms with a common axis, each wound with at least one winding;  
the outside diameter of the first form with its winding or windings being smaller than the inside diameter of the second form so that each may be displaced relative to the other with the first form inside the second form;  
one of the coil forms being movable and the other coil form being stationary;  
the winding or windings on the movable form magnetically coupled to the winding or windings on the stationary form in the absence of any ferromagnetic element inductively coupling the windings; and  
electronic circuitry generating a signal responsive to relative displacements between the coil forms in the range of microns or less.
2. The transducer of claim 1, in which the sensor comprises;  
the coil form with the smaller outside diameter wound with two or more windings and the other coil form wound with a single winding .
3. The transducer of claim 1, in which the sensor comprises;  
the coil form with the larger inside diameter wound with two or more windings and the other coil form wound with a single winding .

---

<sup>1</sup> Urbach defect paper on Barkhausen noise